



**NEW PORT OF SHENGJIN, ALBANIA
FEASIBILITY PRELIMINARY EIA AND ASSOCIATED STUDIES FOR THE
CONSTRUCTION OF A NEW PORT IN SHENGJIN, ITS BACK UP AREA AND A
2.7KM LINKING TUNNEL**

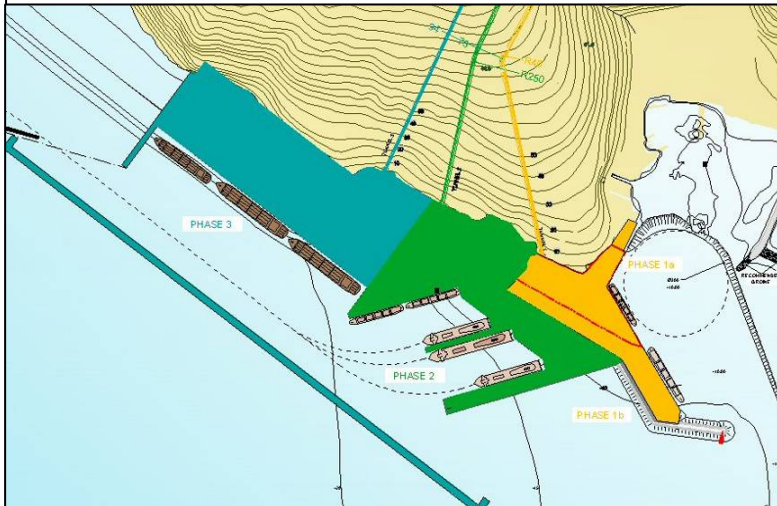
Name of Client: OTTO-AL

The aim of the project consists in developing and increasing the capabilities of the Shengjin port, renovating the already existing infrastructures and improving the efficiency about the port operations. The port will be developed in three phases:

1st phase (yellow): development of the new port on the existing military port of Shengjin by further extending the breakwater and building the terminal itself in a NW-SE alignment along the shoreline. Building of the new coal/cement Terminal and the first tunnel for the connection with the cement factory;

2st phase (green): development of the RO-RO terminal and the second tunnel for linking the port at the existing road system;

3rd phase (blue): development of the container terminal and the third tunnel for linking the port to the railway system.



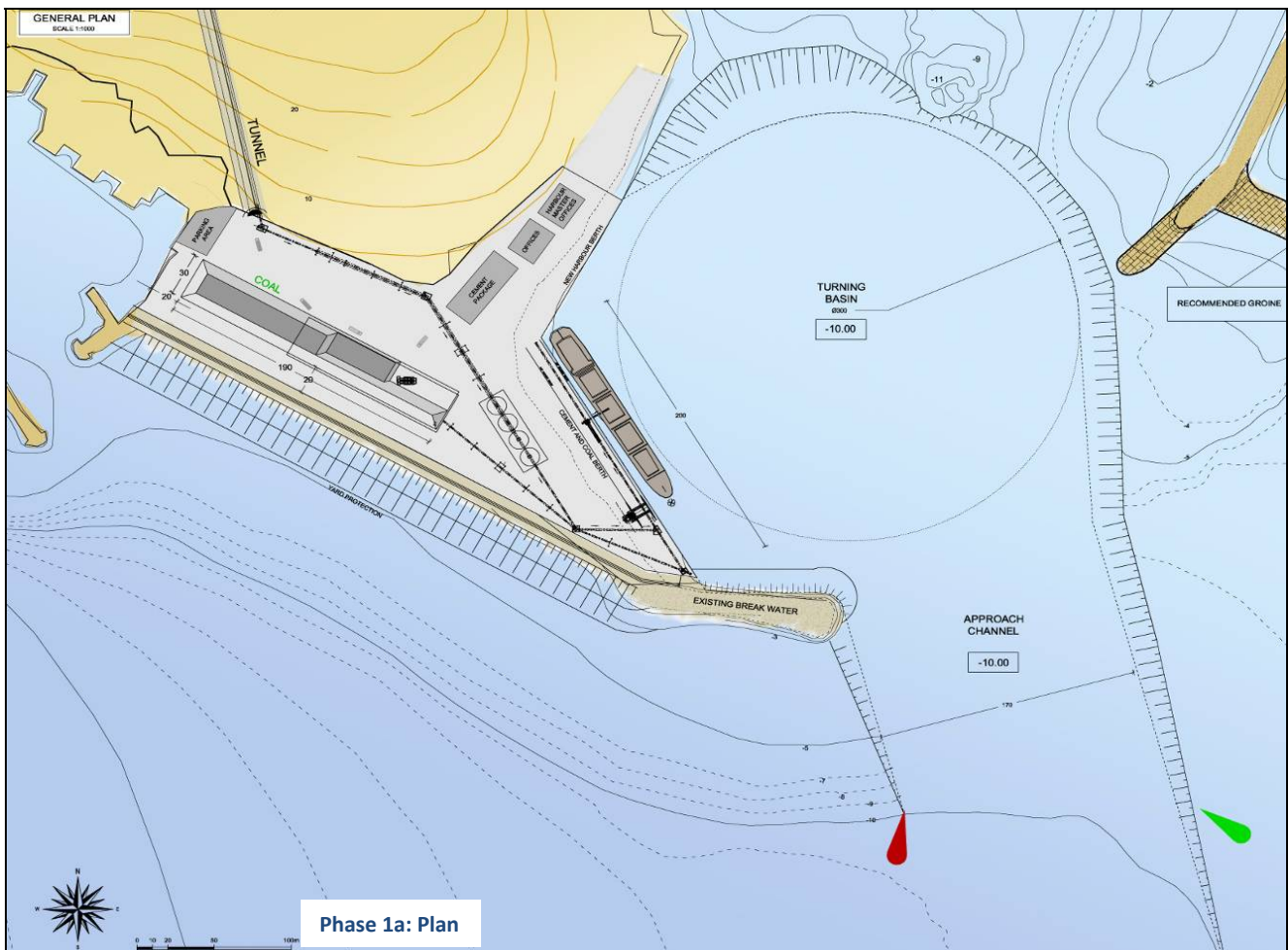


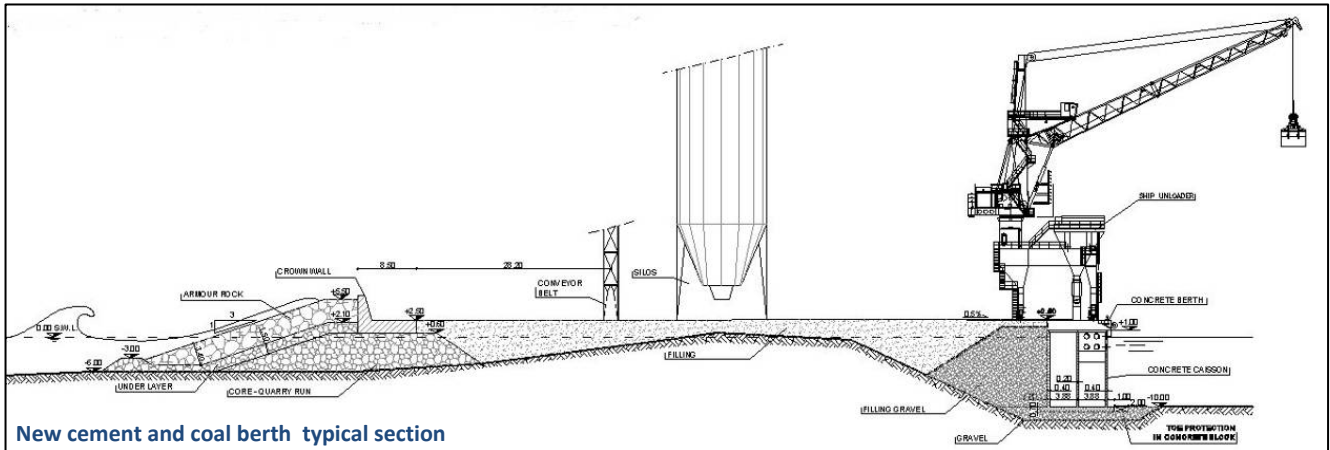
Phase 1: Coal and Cement Terminal and first tunnel.

The 1st phase will be developed in two consecutive phases:

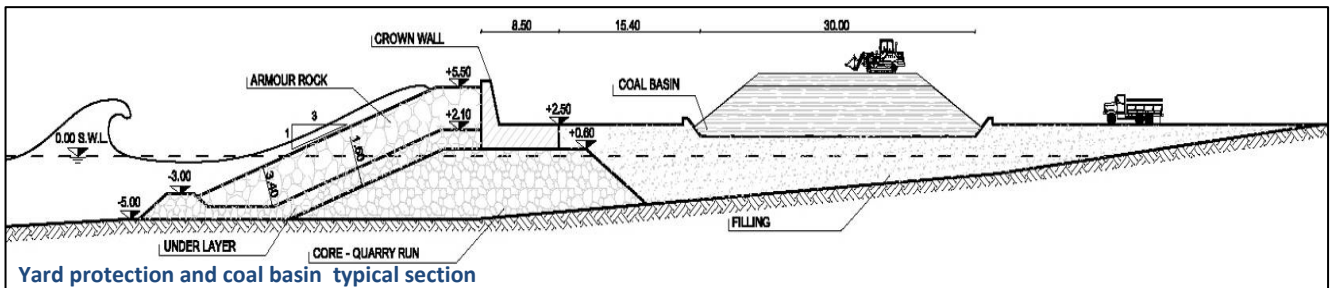
Phase 1a: designed to receive 12.000 DWT ships that export cement and the 15.000 DWT vessels that import coal. Interventions:

- Realization of an approach channel 170 m wide at the bottom with a water depth of -10.0 m MSL, by dredging the existing channel;
- a turning basin and a berth area basin dredged to -10.0 m MSL; The turning area has a width of 300 m or higher.;
- Construction of a rubble mound yard protection for the building of the yard area to be used for the new port activities;
- Deepening of the existing south-western breakwater planned to guaranty the required draft (-10 m);
- Reconstruction of the existing berth which length is 110m approximately;
- Construction of a 200 m new berth at the far east to be used by OTTO- AL – FASSA BERBERI
- Construction of a 3 km approximately tunnel to serve the OTTO- AL – FASSA BERBERI in the first phase.

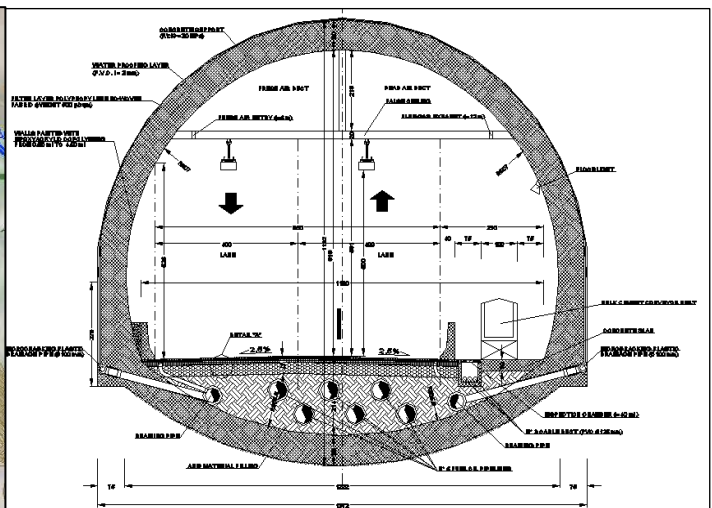
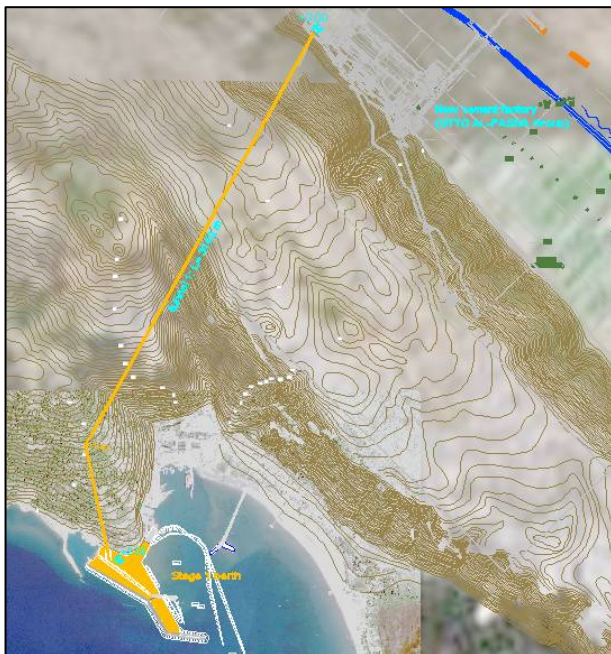




New cement and coal berth typical section



Yard protection and coal basin typical section



Typical section of the tunnel (above) and plan of the tunnel (on the left)

Phase 1b is a prospective extension of the phase 1a, in case of the development of further cements plants and industrial complex in the back area.



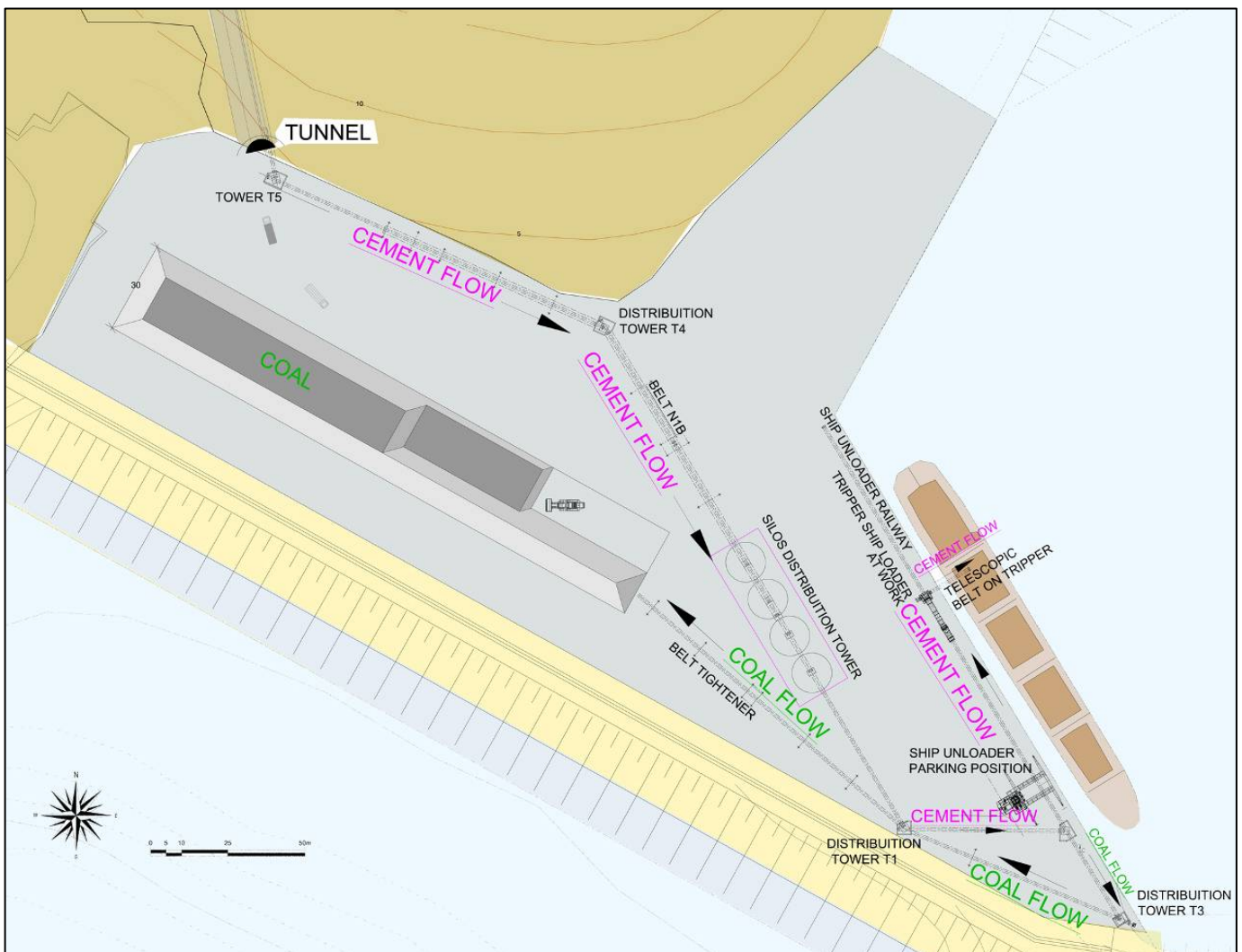
The cement plant located besides the hill will be produce about 3000 t/day, than 1'100'000 t/year. This cement will be partially exported (75%) with cement vessel of 12'000 DWT.

The two types of produced cement will be stored in four silos, located on the yard area: each silo has a capacity of about 3300 m³ (diameter of 13 m, height of 25 m), indeed 4600 t (considering a cement specific weight of 1.4 t/m³).

The connection between the cement plant and the silos will be with a conveyor belt installed before in a tunnel passing through the hill, and after on the yard area.

The coal necessary to produce cement (1t of coal produce 9 t of cement) will be imported with a coal vessel of 15'000 DWT and it will amount about 100'000 t/year.

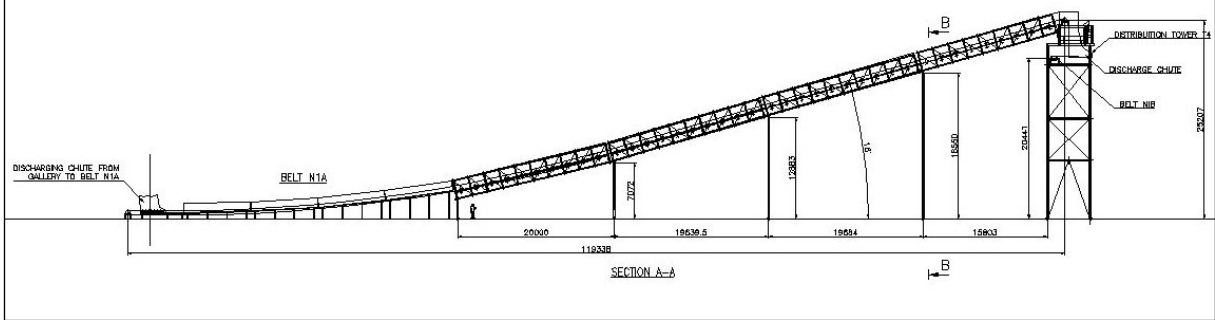
The coal will be stocked in a basin of about 5700 m² (190 m length and 30 m width) located in the yard area, near the entrance of the tunnel.



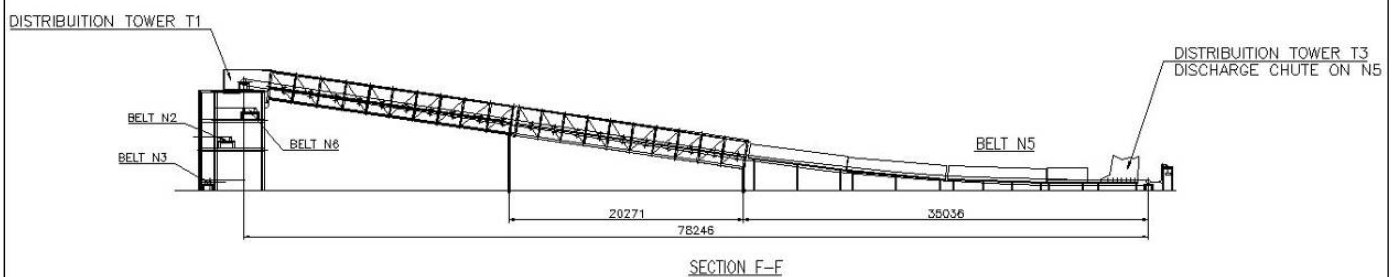
Cement and coal loading/unloading systems



Cement loading system: longitudinal section from the tunnel to the distribution tower T4 – conveyor belt N1a



Coal unloading system



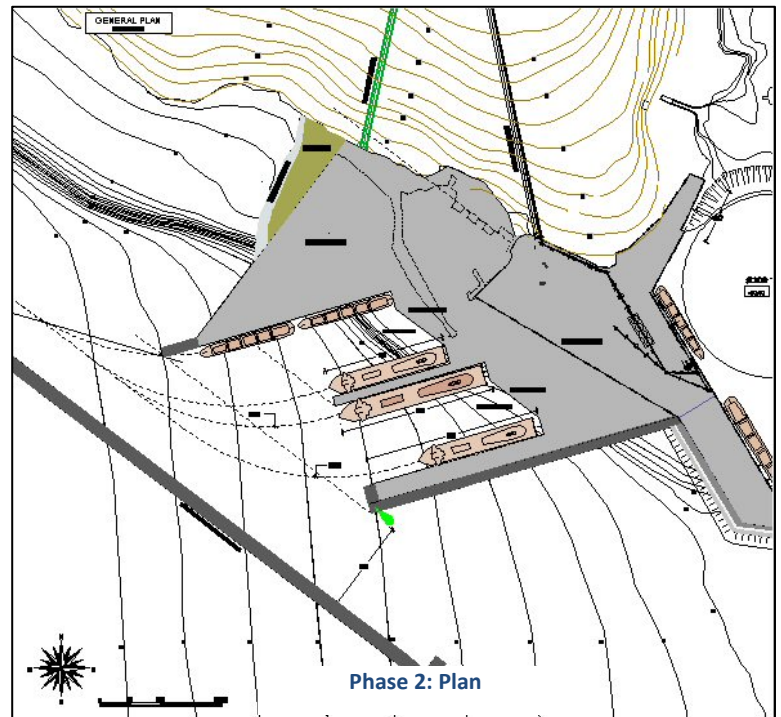
Coal system: conveyor belt N5



Phase 2: RO-RO and cargo terminal and second tunnel

Works:

- vertical caisson breakwater founded on rubble mound, 1010 m length, composed by concrete caissons (5x9 cells);
- Maneuvering area: minimum dimensions of 150 m and a radius of curvature equal to 400 m;
- One-way channel – direction from SE to NW;
- one eastern external 290 m berth for Ro-Ro ships;
- one central pier to accommodate 256m and 200m Ro-Ro ships;
- one western berth for cargo ships.



A road link between the port and the existing road system, will be assured by a new tunnel 3175 m length. It will contain 2-lane road, one for each direction of travel 3,5 m wide, with pavements at the sides 1,5 m wide.

Phase 3: container terminal and third tunnel

Works:

- lengthen the external breakwater of the phase 2 with the same typical section of the same phase 2;
- to further extend the phase 2 jetty North-West and to make a third tunnel, for rail use only with a double track, connecting the future extension of the inland port area;
- one western berth for cargo ships;

